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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/770,792	12/19/96	KOYAMA	J 07977/105001

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EXAMINER

NGO, H

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 09/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Applicant No.

09/770,792

Applicant(s)

LAYTON, MICHAEL R.

Examiner

Julie-Huyen L. Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 2,4-6,10,12-14,17,21-56,61-64 and 68-72 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_ is/are allowed.

6) ☒ Claim(s) 2,4-6,10,12-14,17,21-56,61-64 and 68-72 is/are rejected.

7) ☐ Claim(s) \_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 August 2001 is: a) ☐ approved b) ☒ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 8, 2001 has been entered.

***Drawings***

The proposed drawing correction, filed on August 8, 2001 (paper No. 31), has been approved by the Examiner for figure 6 ***only***. The proposed drawing correction to figure 9 is inconsistent with the specification and claims as filed.

Figures 1 and 9 are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention as specified in the claims. Therefore, the layer of liquid crystal material with which ***the pixel TFTs and driver TFTs contacting directly or via a thin film*** recited in the claims, e.g., claims 17 and 21-24, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. ✓

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recited feature in claims 12 and 43 regarding the thinning region of the TFTs substrate must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Appropriate correction is required.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter of claims 2, 45-50 and 17 (regarding the semiconductor chip). See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 2, 4, 5, 10, 12-14, 24, 25, 27, 29, 32, 34, 37, 39, 42-44, 49, 50, 55, 56

are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of claim 2 is unclear of how the direction of an array of the pixel TFTs is formed in order for the side edge of the TFTs substrate be formed vertical or parallel to.

A similar problem, as set forth above in claim 2, exists in claims 10, 27, 32 and 37.

The recitation "said control ... TFTs substrate," in claims 5, 29, 34 and 39, is inconsistent with what being described in the specification and drawing (figure 9).

**Antecedents have been omitted throughout the claims. No attempt is being made to list each and every occurrence. Those mentioned below are merely exemplary.** Applicant is advised to review the content of the application thoroughly to provide clear and proper antecedent of the claimed subject matter, which Applicant regards as his invention.

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There is no antecedent within the claims for the following recitations:

"said control circuit portion," in lines 5-6 of claim 5 ✓

"the cut side edge of said TFT substrate" and "the cut side edge of said counter substrate," in the last clause of claims 24 and 25

Claims not specifically discussed above are rejected by reason(s) of their dependence on the rejected claim(s).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 61-64 and 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art (APA) in view of Inoue et al (U.S. 5854664), McClelland et al (US4695490) and Sasaki et al (US 4494825).

APA discloses (p.2, lines 14-23, Figs 2-6) a conventional active matrix liquid crystal display comprising all the elements recited in claims 61-64 and 69-72 exclusive of:

a non-conductive or weakly conductive material applied to the side edge of the TFT substrate (505), the side edge of the counter substrate (501) and the part of the bus line (504),

wherein said non-conductive or weakly conductive material is provided on an outer side of a sealing material (502).

It is well known and conventional in the art to apply a non-conductive or weakly conductive material to cut side edges of glass substrates and cut side edge of a bus line for sealing the cut side edges of a liquid crystal display device (LCD), as taught by

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Inoue et al (col. 9, lines 25-31), McClelland et al (col. 1, line 9-col. 2, line 26), and Sasaki et al. (Figure 2, col. 2, lines 35-48).

Therefore, it would have been obvious to apply a non-conductive or weakly conductive material to the cut side edges of glass substrates and bus line in the APA device for completely sealing said side edges of the LCD, taught by Inoue et al, McClelland et al, and Sasaki et al.

Thus claims 61-64 and 69-72 would have been obvious over Applicant's admitted Prior Art (APA) in view of Inoue et al / McClelland et al/Sasaki et al. as applied above.

Claims 2, 4-6, 10, 12-14, 17 and 21-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art (APA) in view of Inoue et al / McClelland et al/Sasaki et al., as applied above to claims 61-64 and 69-72, and further in view of JP405113555A and JP404192446A.

The modified APA device as applied above comprising all the elements recited in claims 2, 4-6, 10, 12-14, 17 and 21-56 exclusive of:

A control circuit comprising of a semiconductor chip, which provides under and in contact with the sealing material, for controlling the driver circuit.

It is well known and conventional in the art to have a control circuit, which is a semiconductor chip, formed on a substrate of a LDC panel for improving workability assembling of a liquid crystal panel, as taught and evidenced by JP405113555A. This reference teaches forming a control circuit/ semiconductor chip 13 for driving liquid crystal around a liquid crystal display part 12 on a substrate 11.

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JP404192446A teaches simultaneously attaining high heat conductivity with low stress by sealing a semiconductor chip with thermosetting resin, which is the mixture of alumina and fused silica.

Therefore, it would have been obvious for one of ordinary skill in the art to form a control circuit, which is a semiconductor chip, for driving the driver TFTs on the TFTs substrate of LDC panel in the APA device, as taught by JP405113555A. Also, it would have been obvious for one of ordinary skill in the art to seal said semiconductor chip in the sealing material of the APA device for attaining high heat conductivity with low stress, as taught by JP404192446A.

Thus claims 2, 4-6, 10, 12-14, 17 and 21-56 would have been obvious over Applicant's admitted Prior Art (APA) in view of Inoue et al / McClelland et al/Sasaki et al., and further in view of JP405113555A and JP404192446A.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2, 4-6, 10, 12-14, 17 and 21-56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the following

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claims of U.S. Patent No. 6246454 in view of Inoue et al (U.S. 5854664), McClelland et al (US4695490) and Sasaki et al (US 4494825).

Since the method claims are just the steps of forming the elements of the device, the method claims would have been obvious in view of the device. Therefore, the method claims are treated below with the corresponding device claims.

Claims 25 and 17-19 of U.S. Patent No. 6246454 17 comprise all the limitations of claims 2, 4-6, 10, 12-14, 17 and 21-56 exclusive of a non-conductive or weakly conductive material applied to the side edges of the TFT substrate, counter substrate and a part of the bus line, wherein said non-conductive or weakly conductive material is provided on an outer side of a sealing material (903).

It is well known and conventional in the art to apply a non-conductive or weakly conductive material cut side edges of glass substrates and cut side edge of a bus line for sealing the cut side edges of a liquid crystal display device (LCD), as evidenced and taught by Inoue et al (col. 9, lines 25-31), McClelland et al (col. 1, line 9-col. 2, line 26), and Sasaki et al. (Figure 2, col. 2, lines 35-48).

Therefore, it would have been obvious for one of ordinary skill in the art to apply a non-conductive or weakly conductive material applied to cut side edges of the glass substrates and bus line in the device of US patent for completely sealing said side edges of the LCD, as taught by Inoue et al, McClelland et al, and Sasaki et al.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



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JP 04179245 discloses a semiconductor chip sealed with a resin to realize a high density without increasing the size of a semiconductor chip by a method wherein a circuit is formed on the surface of the semiconductor chip.

US 4394067 discloses a display device having an IC-crystals accommodated in recesses of the rim of sealing material of the display device to provide protection for IC-crystal and to minimize a non-effective display area.

US 3954325 discloses a multilayer ceramic-based liquid crystal display having an epoxy seal 45 completes the device by sealing the edges of the substrates.


***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie Ngo, whose telephone number is (703) 305-3508.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Art Unit 2871 by facsimile transmission. The Examiner direct fax number is (703) 746-4709. Please call before sending any paper over.

JN  
Sept. 22, 2001

  
***William L. Sikes***  
***Supervisor Patent Examiner***  
***Art Unit 2871***